# **MATERIAL SAFETY DATA SHEET**

# MAGNET PAINT & SHELLAC CO., INC. • 336 Bayview Avenue • Amityville, NY 11701 • (631) 842-7700

# 24 Hour Emergency Telephone: CHEMTEL 1-800-535-5053

THIS MSDS COMPLIES WITH 29 CFR 1910.1200 (THE HAZARD COMMUNICATION STANDARD)

**PREPARED:** 04/15/95 **LAST REVISED:** 6/27/95 **PRINT DATE:** 7/20/2002 **FILE NAME:** 160HS.MSD

# SECTION 1 - PRODUCT IDENTIFICATION

Product Trade Name	.: MAGNATRON <sup>™</sup> 160HS Acrylic Polyurethane Activator (5000 Series)
Product Code	.: 160HS
Product Class	. : Paint
Shipping Classification	.: Paint - Flammable Liquid
DOT Hazard Classification	.: 3 (FLAMMABLE LIQUID)

# **SECTION 2 - HAZARDOUS INGREDIENTS**

INGREDIENT NAME /CAS NUMBER	EXPOSURE LIMITS	CONCENTRATION (%)
Homopolymer of HDI	OSHA: Not Established	
	ACGIH: Not Established	

The recommended guideline level (MGL) for HDI based Polyisocyanates is: 0.5 mg/m3 (TWA - averaged over 8 hours) and 1.0 mg/m3 Short Term Exposure (STEL - averaged over 15 minutes)

Hexamethylene Diisocyanate (HDI) ......\* % 822-06-0 OSHA: Not Established ACGIH: .005 ppm TWA

\* Residual monomer content less than 0.5 % based on resin solids at the time of manufacture. However, after 3-6 months storage, the free monomer content may rise to a maximum of 1.6%. A ceiling level of 0.02 ppm is recommended.

# **SECTION 3 - PHYSICAL PROPERTIES**

PHYSICAL FORM	: Liquid
COLOR	1
ODOR	: of Solvent
MOLECULAR WEIGHT	: Approx. 500 (polyisocyanate)
BOILING POINT	: Not established
MELTING/FREEZING POINT	: Not established
SOLUBILITY IN WATER	: Resin is insoluble - reacts slowly with water to liberate C02 gas.
SPECIFIC GRAVITY	: 1.04 @ 68 F (20 C)
BULK DENSITY	: 8.70 lbs/gal
% VOLATILE BY VOLUME	
VAPOR PRESSURE	: Polyisocyanate: Approx. 7.5 x 10-5 mm Hg @ 20 C
	Xylene: 9 mm Hg @ 20 C

# SECTION 4 - FIRE AND EXPLOSION DATA

FLASH POINT: 91° F (32.7 C) Setaflash (ASTM D-3243, D-3278, D-3828)
FLAMMABLE LIMITS:
UPPER EXPLOSIVE LIMIT (UEL) (%)
LOWER EXPLOSIVE LIMIT (LEL) (%): 1.0 Xylene
EXTINGUISHING MEDIA: Dry Chemical; Carbon Dioxide; Foam; Water spray for large fires.
SPECIAL FIRE FIGHTING PROCEDURES: Full emergency equipment with self-contained breathing apparatus and full protective clothing should be worn by fire fighters. During a
fire, HDI vapors and other irritating, highly toxic gases may be generated by thermal decomposition or combustion. (See Section VIII.) Isolate from heat, electrical equipment, sparks and open
forms Closed container may evaluate when averaged to automa heat or hurst when contaminated with water (C02 aveluad). Solvent vaners may be beautor than air Stormant air may cause you are

#### ROUTE(S) OF ENTRY.

#### ..: Inhalation; Skin Contact; Eye Contact. HMAN EFFECTS AND SYMPTOMS OF OVEREXPOSURE:

ACUTE INHALATION ......: HDI vapors or mist at concentrations above the TLV or MGL can irritate (burning sensation) the mucous membranes in the respiratory tract (nose, throat, lungs) causing runny nose, sore throat, coughing, chest discomfort, shortness of breath and reduced lung function (breathing obstruction.). Persons with a preexisting, nonspecific bronchial hyperreactivity can respond to concentrations below the TLV or MGL with similar symptoms as well as an asthma attack. Exposure well above the TLV or MGL may lead to bronchitis, bronchial spasm and pulmonary edema (fluid in lungs). These effects are usually reversible. Chemical or hypersensitive pneumonitis, with flu-like symptoms (e.g., fever, chills) has also been reported. Solvent vapors may be irritating to the eyes, nose and throat. Symptoms of irritation may include: redness, burning,- and itching of the eyes, dryness of the throat and tightness of the chest. Other possible symptoms of overexposure include: headache, nausea, narcosis, fatigue and loss of appetite. A concentration of 200 ppm BA can cause eye, nose, and throat irritation. At 300 ppm these effects can become severe. Persons exposed to 200 ppm of xylene experienced eye, nose and throat irritation. Concentrations of 10,000 ppm of xylene can be immediately dangerous to life and health.

#### CHRONIC INHALATION .....

...........: As a result of previous repeated overexposures or a single large dose, certain individuals will develop isocyanate sensitization (chemical asthma) which will cause them to react to a later exposure to isocyanate at levels well below the TLV or MGL. These symptoms, which include: chest tightness, wheezing, cough, shortness of breath or asthmatic attack, could be immediate or delayed up to several hours after exposure. Similar to many non-specific asthmatic responses, there are reports that once sensitized an individual can experience these symptoms upon exposure to dust, cold air or other irritants. This increased lung sensitivity can persist for weeks and in severe cases for several years. Chronic overexposure to isocyanates has also been reported to cause lung damage, including decrease in lung function, which may be permanent. Sensitization may be either temporary or permanent. Chronic exposure to organic solvents has been associated with various neurotoxic effects including permanent brain and nervous system damage. Symptoms include: loss of memory, loss of intellectual ability and loss of coordination

ACUTE SKIN CONTACT .....: Isocyanates react with skin protein and moisture and can cause irritation. Symptoms of skin irritation may be reddening, swelling, rash, scaling or blistering. Some persons may develop skin sensitization from skin contact. Cured material is difficult to remove. Repeated or prolonged skin contact with solvents can result in dry, defatted and cracked skin causing increased susceptibility to infection. In addition, skin irritation (i.e. redness, swelling), which may develop into dermatitis, may occur from skin contact. Solvents can penetrate the skin and may cause systemic effects similar to those identified under acute inhalation symptoms.

CHRONIC SKIN CONTACT ......: Prolonged contact with the isocyanate can cause reddening, swelling, rash, scaling or blistering. In those who have developed a skin sensitization, these symptoms can develop as a result of contact with very small amounts of liquid material or even as a result of vapor-only exposure. Chronic skin exposure to solvents may cause effects similar to those identified under chronic inhalation effects.

ACUTE EYE CONTACT.....: Liquid, aerosols and vapors of this product (isocyanate and solvents) are irritating and can cause tearing, reddening and swelling accompanied by a stinging sensation and/or a feeling like that of fine dust in the eyes.

#### 

solvent resulting in chemical pneumonitis

CHRONIC INGESTIO	N	· None Found
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#### CARCINOGENICITY

NTP	: Not listed
IARC	
OSHA	: Not regulated

# MEDICAL CONDITIONS

AGGRAVATED BY EXPOSURE ......: Asthma and other respiratory disorders (bronchitis, emphysema, hyperreactivity), skin allergies, eczema.

EXPOSURE LIMITS .... ...... Not established for product as a whole. Refer to Section II for exposure limits of hazardous constituents. The guideline level of 0.5 mg/m3 - TWA and 1.0 mg/m3 - STEL for the Homopolymer of HDI and 0.02 ppm ceiling for HDI monomer are internal guides based on limited data; they are provided as guides pending the review of future data

### **SECTION 6 - EMERGENCY AND FIRST AID PROCEDURES**

FIRST AID FOR EYES ..........: Flush with clean, lukewarm water (low pressure) for at least 15 minutes, while lifting eyelids. Refer individual to physician or ophthalmologist for immediate follow-up.

thoroughly before reuse. For severe exposures, get under safety shower after removing clothing, then get medical attention. For lesser exposures, seek medical attention if irritation develops or persists.

FIRST AID FOR INHALATION · Move to an area free from risk of further exposure Administer oxygen or artificial respiration as needed. Obtain medical attention Asthmatic-type symptoms may develop and may be immediate or delayed up to several hours. Treatment is essentially symptomatic. Consult physician. FIRST AID FOR INGESTION ..... ....: DO NOT INDUCE VOMITING. Give 1 to 2 cups of milk or water to drink. DO NOT GIVE ANYTHING BY MOUTH TO AN

UNCONSCIOUS OR CONVULSING PERSON. Consult physician.

NOTE TO PHYSICIAN ......: EYES: Stain for evidence of corneal injury. If cornea is burned, instill antibiotic/steroid preparation frequently. Workplace vapors could produce reversible corneal epithelial edema impairing vision. SKIN: This product is a known skin sensitizer. Treat symptomatically as for contact dermatitis or thermal burn. INGESTION: Treat symptomatically. There is no specific antidote. Inducing vomiting is contraindicated because of the irritating nature of the product. INHALATION: This product is a known pulmonary sensitizer. Treatment is essentially symptomatic. An individual having a dermal or pulmonary sensitization reaction to this material must be removed from any further exposure to any isocyanate.

# **SECTION 7 - EMPLOYEE PROTECTION RECOMMENDATIONS**

**REQUIRED WORK/** 

HYGIENE PROCEDURES ... ...: Precautions must be taken so that persons handling this product do not breathe the vapors or have it contact the eyes or skin. In spray operations, protection must be afforded against exposure to both vapor and spray mist.

EYE PROTECTION REQUIREMENTS ......: Safety glasses, splash goggles or face shield. Contact lenses should not be worn.

SKIN PROTECTION REQUIREMENTS ...... Permeation resistant gloves. Cover as much of the exposed skin area as possible with appropriate clothing. If skin creams are used, keep the area protected only by the cream to a minimum.

necessary. Consider type of application and environmental concentrations. Observe OSHA regulations for respirator use (29 CFR 1910.134).

NOTE ON ODOR WARNING PROPERTIES ......: Pure isocyanate materials have odor thresholds that are higher than the TLV, PEL or MGL. Thus, if a vapor/particulate air-purifying respirator has exceeded its service life, breakthrough of the filter can result in exposure over the allowable limit without the wearer being able to smell the isocyanate. However, when a polyurethane coating system contains organic solvents, the wearer of a vapor particulate respirator will be warned of filter breakthrough by the odor of solvents before being exposed to isocyanates because: 1) organic solvents have low odor thresholds, and 2) testing has demonstrated that solvents break through filters before isocyanates do.

should be worn. During the spray application of organic solvent containing coatings systems, the use of a positive pressure supplied air respirator is mandatory when: - the airborne isocyanate concentrations are not known, or - the airborne HDI monomer concentrations exceed 0.05 ppm (10 times the TLV) or the polyisocyanate (polymeric, oligomeric) concentrations exceed 5 mg/m3 averaged over 8 hours or 10 mg/m3 averaged over 15 minutes (10 times the MGL) or - spraying is performed in a confined space or in an area with limited ventilation. A properly fitted airpurifying (combination organic vapor and particulate) respirator, proven by test to be effective in isocyanate-containing spray paint environments, will provide adequate protection when: - the airborne HDI monomer concentrations are known to be below 0.05 ppm (10 times the TLV), and - the polyisocyanate (polymeric, oligomeric) concentrations are known to be below 5 mg/m3 averaged over 8 hours or 10 mg/m3 averaged over 15 minutes (10 times the MGL).

# **SECTION 7 - EMPLOYEE PROTECTION RECOMMENDATIONS - Continued**

#### NON-SPRAY OPERATIONS

.: Even during non-spray operations such as mixing, batch making, brush or roller application, etc., depending on the conditions (for example, heating of material or application to a hot substrate), it is possible to be exposed to airborne isocyanate vapors. Therefore, when the coatings system contains solvents and will be applied in a non-spray manner, a positive pressure supplied air respirator must be worn when:

- the airborne concentrations are unknown: or

- the airborne HDI monomer concentrations exceed 0.05 ppm (10 times the TLV), or

- the airborne concentrations of the polyisocyanate (polymeric, oligomeric) exceed 5 mg/m3 averaged over 8 hours or 10 mg/m3 averaged over 15 minutes (10 times the MGL), or

- operations are performed in a confined space or in an area with limited ventilation. At least an air purifying (organic vapor) respirator is required when:

- the airborne concentrations of the HDI monomer exceed the TLV of 0.005 ppm but are below 0.05 ppm (10 times the TLV), or

- the airborne concentrations of the polyisocyanate (polymeric, oligomeric) exceed the MGL of 0.5 mg/m3 averaged over 8 hours, or 1.0 mg/m3 averaged over 15 minutes but are below 10 mg/m3 (10 times the MGL).

VENTILATION REQUIREMENTS...... ...... Exhaust ventilation sufficient to keep the airborne concentrations of HDI and polyisocyanate below their respective TLV and MGL must be utilized. Exhaust air may need to be cleaned by scrubber or filters to reduce environmental contamination.

MONITORING ..........: Refer to Patty's Industrial Hygiene and Toxicology-Volume 1 (3rd edition) Chapter 17 and Volume III (1st edition) Chapter 3-for guidance concerning appropriate air sampling strategy to determine airborne concentrations.

MEDICAL SURVEILLANCE ....: Medical supervision of all employees who handle or come in contact with HDI is recommended. This should include preemployment and periodic medical examinations with respiratory function tests (FEV, FVC as a minimum). Persons with asthmatic-type conditions, chronic bronchitis, other chronic respiratory diseases or recurrent skin eczema or sensitization should be excluded from working with isocyanates. Once a person is diagnosed as being sensitized to isocyanates, no further exposure can be permitted. ADDITIONAL PROTECTIVE MEASURES ......:: Safety showers and eyewash stations should be available. Educate and train employees in safe use of product. Follow all label instructions

# **SECTION 8 - REACTIVITY DATA**

STABILITY	: Stable under normal conditions. : May occur; Contact with moisture or other materials which react with isocyanates or temperatures over 400 F (204 C) may cause
polymerization.	: Water, amines, strong bases, alcohols, metal compounds and surface active materials.
INSTABILITY CONDITIONS	: None known
DECOMPOSITION PRODUCTS	: By high heat and fire: carbon dioxide, carbon monoxide, oxides of nitrogen, HCN, HDI.

# **SECTION 9 - SPILL AND LEAK PROCEDURES**

....: Evacuate nonessential personnel. Remove all sources of ignition and ventilate the area. Notify appropriate authorities if necessary. Put on SPILL OR LEAK PROCEDURES personal protective equipment (See Section VII). Dike or impound spilled material and control further spillage if feasible. Cover the spill with sawdust, vermiculite, Fuller's earth or other absorbent material. Pour decontamination solution over spill area and allow to react for at least 10 minutes. Collect material in open containers and add further amounts of decontamination solution. Remove containers to a safe place, cover loosely, and allow to stand for 24 to 48 hours. Wash down spill area with decontamination solutions

Decontamination solutions: nonionic surfactant Union Carbide's Tergitol TMN-10 (\* 20%) and water (80%); concentrated ammonia (3-8%), detergent (2%) and water (90-95%). method. Empty containers must be handled with care due to product residue and flammable solvent vapor. Decontaminate containers prior to disposal. DO NOT HEAT OR CUT EMPTY CONTAINER WITH ELECTRIC OR GAS TORCH. (See Section IV and VIII).

# **SECTION 10 - SPECIAL PRECAUTIONS & STORAGE DATA**

#### STORAGE TEMPERATURE(MIN/MAX) .....: -30 F (-34 C)/122 F (50 C) SHELF LIFE ....

.....: 6 months at 77 F (25 C) after receipt of material by customer.

SPECIAL SENSITIVITY..... ......: If container is exposed to high heat, it can be pressurized and possibly rupture explosively. HDI reacts slowly with water to form C02 gas. This gas can cause sealed containers to expand and possibly rupture explosively.

HANDLING/STORAGE PRECAUTIONS ...........: Keep away from heat, sparks and open flame. Ground containers during storage and transfer operations. Store in tightly closed containers to prevent moisture contamination. Do not reseal if contamination is suspected. At maximum storage temperatures noted, material may slowly polymerize without hazard. Ideal storage temperature range for ease of handling is 50-81 F (10-27 C). Avoid contact with skin and eyes. Employee education and training in the safe use and handling of this product are required under the OSHA Hazard Communication Standard.

### **SECTION 11 - SHIPPING INFORMATION**

TECHNICAL SHIPPING NAME	: Paint, contains xylene
FREIGHT CLASS BULK	: Isocyanate
FREIGHT CLASS PACKAGE	: Paint
PRODUCT LABEL	: MAGNATRON™ 160HS ACTIVATOR

#### DOT (HM-181) (DOMESTIC SURFACE)

PROPER SHIPPING NAME	: Paint
HAZARD CLASS OR DIVISION	: 3
UN/NA NUMBER	: UN1263
PACKAGING GROUP	: PG III
DOT PRODUCT RQ lbs (kgs)	: 8,000 lbs (3628.8 kgs)
HAZARD LABEL(s)	: Flammable Liquid
HAZARD PLACARD(s)	: Flammable

### IMO / IMDG CODE (OCEAN)

PROPER SHIPPING NAME	: Paint
HAZARD CLASS DIVISION NUMBER	: 3.3

UN NUMBER	: UN1263
PACKAGING GROUP	: III
HAZARD LABEL(s)	: Flammable Liquid
HAZARD PLACARD(s)	: Flammable Liquid

#### ICAO / IATA (AIR)

PROPER SHIPPING NAME	: Paint
HAZARD CLASS DIVISION NUMBER	: 3
UN NUMBER	: UN1263
SUBSIDIARY RISK	: None
PACKING GROUP	: III
HAZARD LABEL(s)	: Flammable Liquid
RADIOACTIVE ?	: Non-Radioactive
PASSENGER AIR - MAX. QTY.	: 60L
PASSENGER INSTRUCTION NUMBER	: 309
CARGO AIR - MAX. QTY.	: 220L
CARGO AIR INSTRUCTION NUMBER	: 310

# SECTION 12 - ANIMAL TOXICITY DATA

TOXICITY DATA FOR	: HDI homopolymer materials except where indicated.				
ACUTE TOXICITY					
ORAL LD50	: Estimated to be greater than 10,000 mg/kg (Rats). (Based on the results of actual tests conducted using specific HDI-homopolymer				
products.)					
INHALATION LC50	: Lower respiratory (pulmonary) irritant. LC50 values ranging from 137-1150 mg/m3 were obtained in rats exposed to aerosols.				
EYE EFFECTS	: Severe irritant capable of inducing corneal injury (Rabbit); maximum primary eye irritation score: 54.6/110 for a 24 hr. exposure.				
SKIN EFFECTS	: Moderate irritant; primary dermal irritation score: 3.4/8.0 (Rabbit).				
SENSITIZATION	: Pulmonary and dermal sensitizer in animals and humans. Evidence exists that cross-sensitization between HDI and other isocyanates,				
particularly hydrogenated MDI and TDI, can occur. OTHER ACUTE EFFECTS: AMES TEST: Negative for 100% solids material.					
SUBCHRONIC TOXICITY	: Rats exposed to an HDI homopolymer (biuret type, specifically, the solvent-free version of this product), at 3.7, 17.5 and 76.6 mg/m3 for				
three weeks (6 hrs/day, 5 days/wk) exhibited respiratory distress and many inflamed areas of tissue in the lungs and upper respiratory tract when exposed to 17.5 mg/m3 and above. The No					
Observable Effect Level (NOEL) was 3.7 mg/m3. Rats exposed for three months (6 hrs/day, 5 day/wk) to a HDI homopolymer (biuret type, specifically, the solvent-free product version of this					
product), at aerosol concentrations of 0.4, 3.4 and 21	1 mg/m3 exhibited lung weight increases at the highest dose. Histopathologic diagnosis of the test animals revealed swelling and thickening in				
the lower respiratory tract as well as thickening of the bronchio-alveolar areas of the lung and thickening of the septum in the 21 mg/m3 animals. There were no effects noted in the upper and					
central respiratory tract. The No Observable Effect I	Level (NOEL) in this study is considered to be 3.4 mg/m3.				

**OTHER TOXICITY DATA**.....: Mice were exposed to a liquid aerosol of an HDI homopolymer (isocyanate type, specifically, the solvent-free version of this product), mixed with acetone for three hours. The irritation potential expressed as the RD50 (the concentration which is predicted to reduce the respiratory rate by 50%) was 20.8 mg/m3 (95% confidence interval = 18.3 to 23.9 mg/m3). Pulmonary (lung) irritation was observed first, followed by sensory (eye, nose, and throat) irritation.

: Xylene
:: 4,300 mg/kg (Rat)
: Greater than 1,700 mg/kg (Rabbit)
: 5,000 ppm (Rat, 4H exp)
: Mild to severe irritation (Rabbit)
: Moderate irritation (Rabbit)

# **SECTION 13 - FEDERAL REGULATORY INFORMATION**

OSHA STATUS	.: This product is hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29 CFR 1910.1200.
TSCA STATUS	: On TSCA Inventory
CERCLA REPORTABLE QUANTITY	: Xylene : 1000 lbs
SARA TITLE III:	
SECTION 302 EXTREMELY	
HAZARDOUS SUBSTANCES	: None
SECTION 311/312	
HAZARD CATEGORIES	: Immediate Health Hazard; Delayed Health Hazard; Fire Hazard; Reactive Hazard
SECTION 313	
TOXIC CHEMICALS	
RCRA STATUS	: When discarded in its purchased form, this product meets the criteria of ignitability, and should be managed as a hazardous waste (EPA
Hazardous Waste Number D001). (40 CFR 261.20-24	

### **SECTION 14 - OTHER REGULATORY INFORMATION**

The following chemicals are specifically listed by individual states; other product specific health and safety data in other sections of the MSDS may also be applicable for state requirements. For details on your regulatory requirements you should contact the appropriate agency in your state.

COMPONENT NAME CONCENTRATION /CAS NUMBER		STATE CODE		
Homopolymer of HDI 28182-81-2	75 %	PA3, NJ4		
Xylene 1330-20-7	25 %	PA1, MA, NJ2		
FL = Florida Substance List IL = Illinois Toxic Substances List MA = Massachusetts Hazardous Substance List NJ1 = New Jersey Hazardous Substance List NJ2 = New Jersey Other - included in 5 predominant ingredients > 1%		NJTSRN = New Jersey Trade Secret Registry Number PAX = Pennsylvania Hazardous Substance List PA1 - Pennsylvania Hazardous Substance List PA3 = Pennsylvania Non-hazardous present at 3% or greater. RI = Rhode Island List of Designated Substances CN2 = Canada WHMIS Ingredient Disclosure List over 0.1%.		

#### **CALIFORNIA PROPOSITION 65**

To the best of our knowledge, this product contains no levels of listed substances, which the state of California has found to cause cancer, birth defects or other reproductive effects.

NFPA 704M RATINGS:	Health	Flammability	Reactivity	Other		
	3	3	1			
	0 = Insignificant $1 =$ Slight $2 =$ Moderate $3 =$ High $4 =$ Extreme					
HMIS RATINGS:	Health	Flammability	Reactivity			
	3*	3	1			
	0 = Minimal $1 = Slight$ $2 = Moderate$ $3 = Serious$ $4 = Severe$					
	* = Chronic H	ealth Hazard				

MAGNET's method of hazard communication is comprised of Product Labels and Material Safety Data Sheets. HMIS and NFPA ratings are provided by MAGNET as a customer service.

THE DATA IN THIS MSDS HAS BEEN COMPILED FROM PUBLICLY AVAILABLE SOURCES. THIS DATA RELATES ONLY TO THE DESIGNATED PRODUCT AND NOT TO THE USE OF SAID PRODUCT IN COMBINATION WITH OTHER MATERIALS. BECAUSE CONDITIONS AND CIRCUMSTANCES OF USE OF THE PRODUCT ARE BEYOND OUR CONTROL AND ANY SUMMARY OF DATA SUCH AS IS REPRESENTED BY THIS MSDS IS INHERENTLY INCOMPLETE, MAGNET PAINT/McGREVOR COATINGS MAKES NO WARRANTY ABOUT THE ACCURACY OF THE DATA HEREIN AND ASSUMES NO LIABILITY FOR THE USE OF SUCH DATA. RESPONSIBILITY FOR PROPER PRECAUTIONS AND SAFE USE OF THIS PRODUCT LIES WITH THE USER.